

**HEPATITIS A OUTBREAK AMONG METHAMPHETAMINE USERS
LOS ANGELES COUNTY, 1999**

BACKGROUND

Hepatitis A is caused by a virus that is primarily spread via fecal-oral or food/waterborne routes. The groups at highest risk are household and sexual contacts of infected persons, international travelers, Native Americans, and persons who live in areas endemic for hepatitis A. Other risk groups include sexually active heterosexuals, men who have sex with men, and illicit drug users. The Advisory Committee on Immunization Practices (ACIP) recommends post-exposure prophylaxis of contacts to acute cases with immune globulin (IG) because it is possible to halt the transmission of hepatitis A by providing the contacts with IG within two weeks of exposure.

Within one working day of diagnosis, physicians and laboratories are required to report all cases of acute hepatitis A to the Morbidity Unit of the Los Angeles County Department of Health Services. Once reported, each case is assigned to the appropriate local health district in which a public health nurse (PHN) interviews the case within 24 hours. Using the CDC Viral Hepatitis Surveillance Program (VHSP) form, the PHN seeks to identify risk factors and recent contacts with acute hepatitis A, and obtain names of contacts who need post-exposure IG.

In August 1999 a patient hospitalized with acute hepatitis A was reported to the Acute Communicable Disease Control (ACDC) Unit. Upon questioning, the patient revealed that he knew of at least three other people who had hepatitis A in the six weeks prior to his onset. The patient also admitted to methamphetamine use with these other people.

In order to better understand the role of methamphetamine in the transmission of hepatitis A in Los Angeles County, ACDC undertook two studies. The first study was descriptive, tracing the pattern of hepatitis A transmission among the patient and his group of friends. ACDC worked with the Long Beach City Health Department in this investigation, as more than half of the identified cases of hepatitis A were Long Beach residents.

In the second study, performed during August and September of 1999, ACDC assessed the use of methamphetamine by patients with acute hepatitis A by re-interviewing for drug use the cases of hepatitis A who had been reported to the Morbidity Unit. In this way the ability of the PHN using the VHSP form to identify illicit drug-associated cases of hepatitis A in Los Angeles County was also evaluated.

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METHODS

For the purpose of these studies, a case of acute hepatitis A was defined as a person who tested positive for anti-hepatitis A IgM or who was diagnosed by a physician as having acute hepatitis A and epidemiologically linked to another patient with acute hepatitis A.

To trace the spread of hepatitis A in the case-patient's group of friends and family, the patient was carefully questioned about his risk factors for hepatitis A. We asked the case-patient for contact information on everyone he knew with symptoms of acute hepatitis A. We then asked each contact about their risk factors for acute hepatitis A, the extent of their contact with other cases (sexual, household, friend, drug-sharing partner, etc.) and the name of anyone else they knew who had been recently diagnosed with acute hepatitis A. Attempts were then made to speak with these contacts. Associations between people were also traced by the personal links recorded on the VHSP form or on a similar form used by the Long Beach City Health Department.

To determine the presence of methamphetamine use associated with hepatitis A, we re-interviewed non-outbreak associated patients with acute hepatitis A who had been reported during April-August 1999. We restricted our interviews to those between the ages of 20-50 who lived in the southeast health districts of Los Angeles County (roughly the demographics of the index patient and his social network) and who had no other identifiable risk factor for acute hepatitis A on initial interview by a district PHN. Using open-ended questions, we asked these patients about non-prescription drug use, focusing on methamphetamine. If they admitted to drug use, we asked if they knew of anyone else with acute hepatitis A with whom they shared drugs.

RESULTS

ACDC was able to trace several generations of confirmed acute hepatitis A through a cohort of 16 people, including the first case-patient, over a three-month period from May-August 1999. All were white, with an average age of 33 and a median age of 30 years; two patients, ages 40 and 49, were hospitalized. Seven patients were men and nine were women. Many in this cohort had known each other for years. Their exposures were through drug sharing, sexual contact, and household contact. Methamphetamine was the most common drug shared and was injected, ingested, smoked, and snorted.

Chronologically the first case-patient was a woman in her 20s whose onset was May 20, 1999. She felt that her infection source was a sexual partner; efforts to locate this partner were unsuccessful. By June 13th, two of her sexual and one of her drug-sharing partners

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were diagnosed with acute hepatitis A. By July 7th, five other people, either sexual or drug-sharing partners of the first group, were diagnosed with acute hepatitis A. By the end of August, an additional seven other sexual, drug-sharing, or household contacts (including the index case-patient) of the original May-July cases were diagnosed with acute hepatitis A. Because of overlapping onset dates, and the multiple different kinds of contacts members of this cohort had with each other (sexual, household, drug sharing), it was impossible to trace a direct line of infection from one person to the next, except for the first cases in June.

Almost all of the cases admitted to knowing at least one other person with acute hepatitis A on the VHSP form. However, unlike the results of interviews by ACDC, few of the original VHSP forms indicated recent drug use. The VHSP has only one question about injection drug use. Many of the cohort smoked, but did not inject, methamphetamine. Not a single form identified a drug-sharing contact as needing prophylaxis.

Drug and methamphetamine use was commonly cited when re-interviewing non-outbreak cases of acute hepatitis A, although none of the VHSP forms recorded that information. These non-outbreak associated patients were often sexual and/or drug-sharing partners with someone else who had recent acute hepatitis A. We were not able to link any of these cases to the outbreak cohort but several cases, in retrospect, could be linked to each other. For example, we were able to trace the path of hepatitis A from a six-year-old child in January to his mother, his mother's ex-husband, the ex-husband's daughter (who was a methamphetamine user) and then to her drug-using contacts and a girlfriend of one of these contacts (last onset July 7, 1999).

CONCLUSIONS

A cohort of 16 patients with documented acute hepatitis A was identified and characterized. Methamphetamine sharing, household contact, and sexual contact were the engines that drove this outbreak. More aggressive questioning and contact identification in this outbreak might have helped prevent several generations of hepatitis A infection. The fact that this occurred in two different jurisdictions, and that drug use was not recognized as a risk factor for disease, hindered the recognition of this outbreak.

Methamphetamine use is under-reported and widely associated with transmission of hepatitis A in whites, aged 20-50 years, in certain health districts of Los Angeles County. The CDC VHSP form has one question about injection drug use (which is located in a separate section on bloodborne risk factors commonly associated with hepatitis B and C) and there are no questions about non-injection drug use.

DISCUSSION AND RECOMMENDATIONS

The ACIP has issued a recommendation that drug-sharing partners of acute cases of hepatitis A should receive post-exposure prophylaxis with immune globulin (IG) and hepatitis A vaccine. Therefore, it is important to ask case-patients about drug use, even if the case-patient acquired the hepatitis A from a non-drug source, in order to offer post-exposure prophylaxis (PEP) to their drug-sharing partners in the same way it would be offered to household and sexual contacts. This includes non-injection drug sharing partners because non-injection methamphetamine use has been associated with hepatitis A transmission.

Public health nurses should be encouraged to ask about all drug use, not just injection drug use, in order to offer PEP to all at-risk contacts. Documenting drug use would also help ACDC have a better understanding of the role of drug use in the spread of hepatitis A. If there is significant transmission associated with drug use, then immunization campaigns in outbreak and non-outbreak situations should be considered.

Better communication is needed between ACDC and the Long Beach City Health Department concerning interlocking clusters of hepatitis A. Each communicable disease investigation unit needs to be notified when there is a known contact with hepatitis A who lives in the other jurisdiction so that outbreak investigations can be coordinated.

The CDC is reconfiguring the VHSP form to better assess risk factors for hepatitis A, including adding a question about all drug use.